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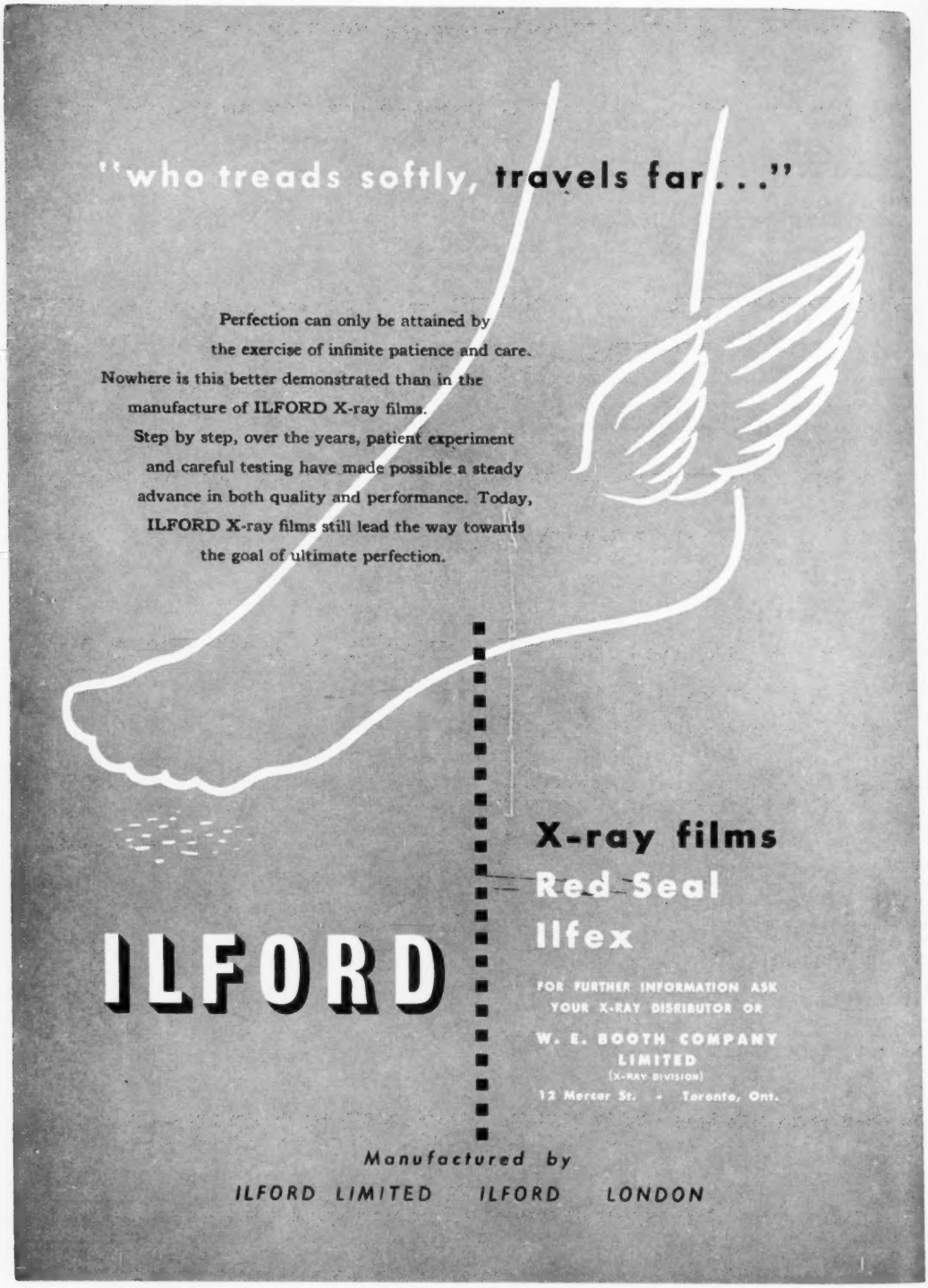
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THE JOURNAL OF THE
CANADIAN ASSOCIATION OF RADIOLOGISTS

Volume IX | September 1958 | Number 3

THE EFFECT OF ROTATION OF THE SKULL ON THE MEASURED POSITION OF THE PINEAL GLAND*

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It is common experience, in studying skull roentgenograms, to find slight degrees of rotation in some of the routine projections. This is even more likely to occur if the patient is difficult to position because of deformity or unconsciousness. One has misgivings about assessing the position of the pineal gland in roentgenograms which show rotation. Experiments were carried out on dry skulls in order to determine whether some rotation can occur without causing a shift in the measured position of a normally placed pineal.

Review of Literature

In 1936 Fray[1] carried out a series of experiments with the same purpose in mind. He placed a radiopaque marker inside a dry skull so that the marker indicated the position of a normally placed pineal gland. Using a 36″ target-film distance and a skull which was of normal contour, Fray made anteroposterior and postero-anterior roentgenograms with the skull rotated 0, 2, 4, 6, 8, 10 and 15 degrees to the right and to the left. Lateral views were made of dolichocephalic and brachycephalic skulls with 0, 4, 8, 12 and 20 degrees of rotation.

Fray determined the midsagittal plane and, hence, the normal position of the radiopaque pineal gland by measuring the distance between the centre of the pineal shadow and the inner tables of the skull. Fray allowed a 2 mm. variation in these two distances for the following reasons:

1. The visible calcium in the pineal gland may not be in the exact centre of the gland.
2. The two halves of the cranial vault may not be strictly symmetrical.
3. There may be an error in measurement.

In these experiments, Fray found that rotation of the skull in the frontal projection up to 15° and in the lateral projection up to 15° (brachycephalic) and 10° (dolichocephalic) did not change the measured position of the pineal gland. These degrees of rotation were stated to exceed by far those which would be acceptable for interpretation, even under difficult circumstances.

Having determined the effect of rotation of the skull on a normally placed pineal, Fray purposely displaced the pineal 1 cm. to the right and then to the left of the midsagittal plane. Furthermore, with the skull in the lateral projection he displaced the pineal gland successively 1 cm. anteriorly, superiorly, posteriorly and inferiorly from the normal position and repeated the rotational experiments. He found that a displaced pineal would be recognized in the presence of rotation.

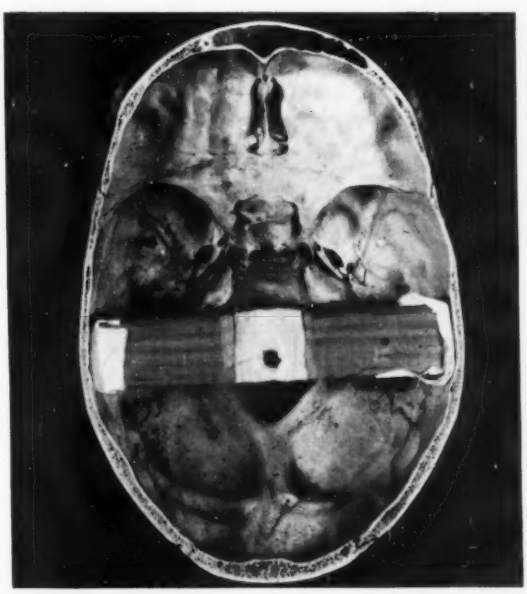

Figure 1 — Method of placing the pineal gland in position. Adhesive is used to affix the B.B. shot (black dot) on to block of wood.

*From the Department of Diagnostic Radiology, University of Toronto, Faculty of Medicine, and the Toronto General Hospital.

†The cephalic index (expressed in per cent) is defined as the ratio of the greatest transverse diameter of the skull above the supramastoid ridge to the distance between the glabella and the occipital point multiplied by 100.

Experiments and Observations

A — Symmetrical Skulls

Three symmetrical skulls were obtained, one of which was dolichocephalic, one mesocephalic and one brachycephalic in shape (cephalic indices of 68, 76 and 82 respectively).† A radiopaque pineal gland (B.B. shot) was placed in the midsagittal plane of the skull and in the transverse plane, in such a position that it satisfied Dyke's[2] modification of the Vastine and Kinney[3] criteria for the pineal in the lateral projection (Fig. 1). Using a 50″ target-film distance, Towne, Caldwell and reverse Caldwell views were made with 0, 5, 10, 15 and sometimes 20 degrees of rotation both to the right and to the left (Fig. 2). Lateral projections were also made with the skull rotated 0, 5, 10, 15 and 20 degrees (chin towards film).

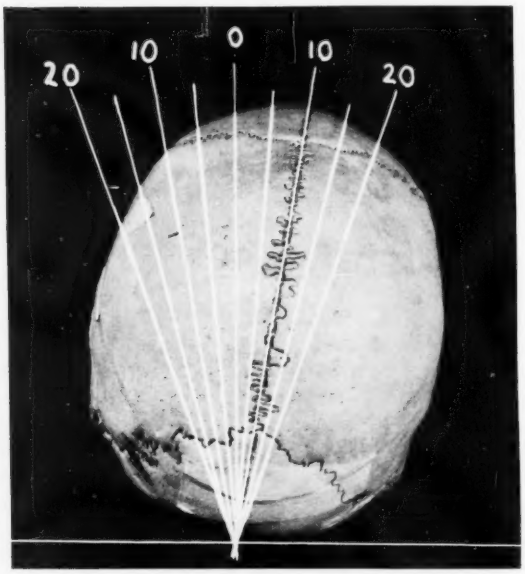

Figure 2a – Method of rotating skull. Skull is in position for Towne view with 10° of rotation.

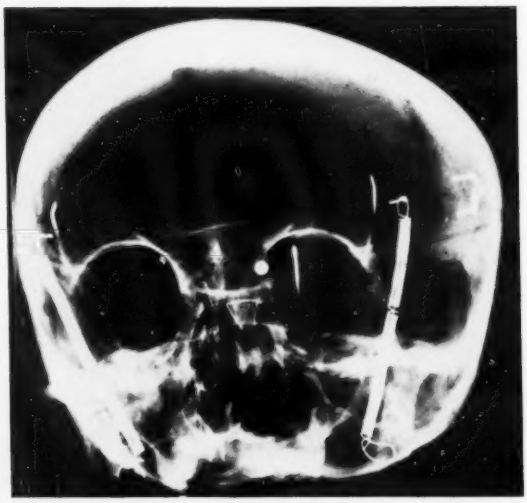

Figure 2b – Caldwell view with skull rotated 10°. "Pineal" measures in mid-line.

The greatest transverse diameter of the skull from outer table to outer table was measured on the roentgenograms. Where the greatest transverse diameter did not correspond to the transverse diameter at the level of the pineal, the former was used but it must be stated that a variation of no more than 1.5 mm. in the measured position of the pineal gland could be produced when these two

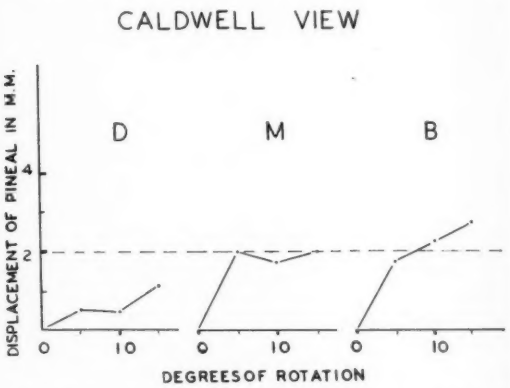

Figure 3 — Amount of displacement of pineal with different degrees of rotation in Caldwell projection.
D — dolichocephalic M — mesocephalic
B — brachycephalic

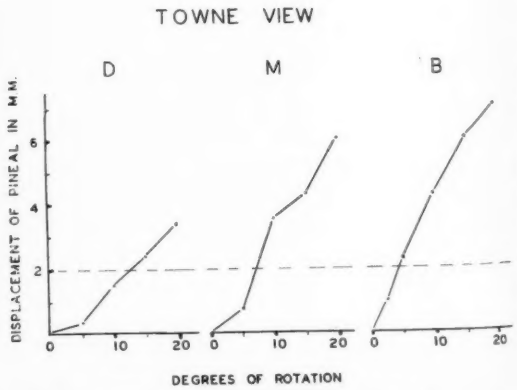

Figure 4 — Amount of displacement of pineal with different degrees of rotation in Towne projection.
D — dolichocephalic M — mesocephalic
B — brachycephalic

transverse diameters were compared in any one skull. Half of this greatest transverse diameter was taken as the normal position of the pineal gland. For reasons given by Fray, a pineal measuring up to 2 mm. from the midline was considered normal in position. The degree of rotation of the skull which produced a displacement of the pineal from the midsagittal plane of 2 mm. was called the permissible rotation. This value was interpolated from the graphs made of the experimental data (Figs. 3, 4, and 5).

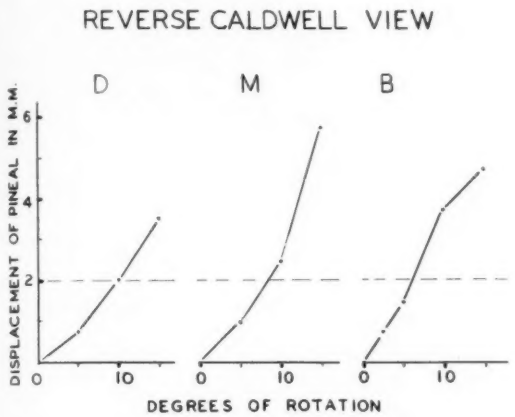

Figure 5 — Amount of displacement of pineal with different degrees of rotation in reverse Caldwell projection.
D — dolichocephalic M — mesocephalic
B — brachycephalic

Figures 3, 4 and 5 are graphs demonstrating the relationship between the measured displacement of the pineal gland and (a) the shape of the skull and (b) the projections used. From these, the following conclusions are drawn: (a) In a dolichocephalic skull there is the least displacement per degree of rotation; i.e., if one observes the broken horizontal line representing a 2 mm. displacement in each graph, it is seen that in each projection most rotation is permitted in the dolichocephalic skull. Furthermore, this permissible rotation becomes progressively less as one passes from the dolichocephalic to the mesocephalic to the brachycephalic skull. (b) Observing this same line drawn at the 2 mm. displacement level, it is seen that the Caldwell view of the dolichocephalic skull allows the greatest degree of permissible rotation (about 30° by extrapolation) as compared with the Towne view (12°) and the reverse Caldwell view (10°).

Figure 6 is a composite chart, summarizing the findings in Figures 3, 4 and 5.

In the lateral projection, rotation of the skull up to 20° produced no significant change (less than 3 mm. in any one diameter, in the measured position of the pineal gland.

AMOUNT OF DISPLACEMENT OF PINEAL (IN MM) WITH DIFFERENT DEGREES OF ROTATION

ASYMMETRICAL SKULLS

Rotation in Degrees	Slightly Asymmetrical (Cephalic Index = 73)		Moderately Asymmetrical (Cephalic Index = 80)		Markedly Asymmetrical (Cephalic Index = 80)	
	Rotation to Right	Rotation to Left	Rotation to Right	Rotation to Left	Rotation to Right	Rotation to Left
CALDWELL PROJECTION						
5	1.5	0.5	1	0.5	1	0
10	1.5	1.5	1	1	1	0
15	3	2.5	2	1	1	0.5
TOWNE PROJECTION						
5	2	1	1.5	0.5	0.5	0.5
10	3	2	2.5	0.5	1.5	0
15	4	3.5	3	2	1.5	1.5
REVERSE CALDWELL PROJECTION						
5	1.5	1.5	0	0	0	1
10	2.5	3	0	0.5	6	2.5
15	3	5.5	0.5	0.1	1	1

Table I — Results of experiments with asymmetrical skulls.

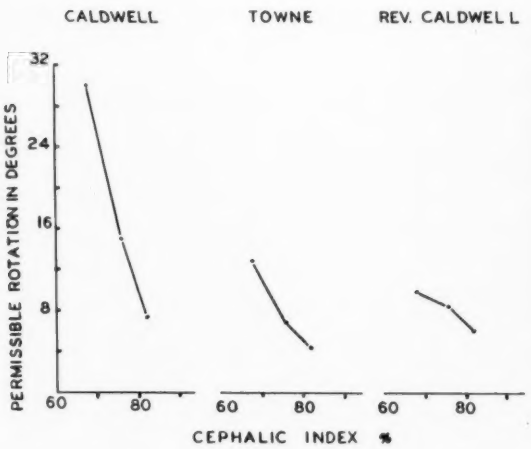

Figure 6 — Graph showing that the amount of permissible rotation varies inversely as the cephalic index. In a dolichocephalic skull, the permissible rotation is greater than in a brachycephalic skull. In the Caldwell projection, the permissible rotation is greater than in either Towne or reverse Caldwell views (symmetrical skulls).

B — Asymmetrical Skulls

Having noted that some skulls were asymmetrical, it was decided to repeat the above experiments, using skulls of different degrees of asymmetry. Of 95 skulls surveyed in the Department of Anatomy of the University of Toronto, 57 were symmetrical, 26 slightly asymmetrical, 6 moderately asymmetrical and 6 markedly asymmetrical in contour. Asymmetry was recognized best in the basal view and less well in the Towne view (Fig. 7).

Three skulls were chosen, one slightly, one moderately and one markedly asymmetrical, with cephalic indices of 73, 80 and 80 respectively. Table I gives the same information for asymmetrical skulls as Figures 3, 4, 5 and 6 do for symmetrical skulls.

Again it is seen that the Caldwell projection allows the greatest degree of permissible rotation and that with rotation up to 10° no significant displacement of the pineal gland is encountered. This is irrespective of the cephalic index or the degree of asymmetry. In the Towne and reverse Caldwell projections, no general conclusion can be drawn but in all views and with all degrees of asymmetry at least 5° of rotation are permissible.

With the asymmetrical skulls in the lateral projection, rotation up to 20° did not cause significant displacement of the pineal gland.

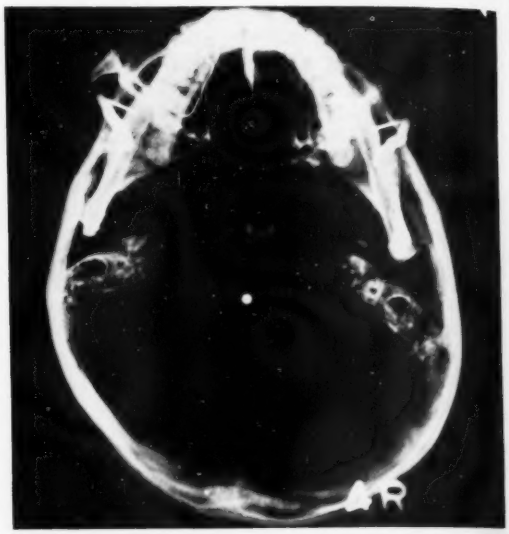

Figure 7 — Asymmetrical skull
(a) basal view
(b) Towne view

C — Pineal Calcification

In order to observe the location of calcification within pineal glands, roentgenograms were made of 13 glands obtained at post mortem (Fig. 8). Most of these showed calcification. The greatest transverse diameter of the calcification was 5 mm. In one gland the calcification was concentrated on one side of the midline. It is conceivable that such an

eccentric mass of calcium might lie 2 mm. from the midsagittal plane of the gland and might be the only visible calcium in the roentgenogram. For this reason a 2 mm. tolerance to either side of the midline is allowed (as suggested by Fray).

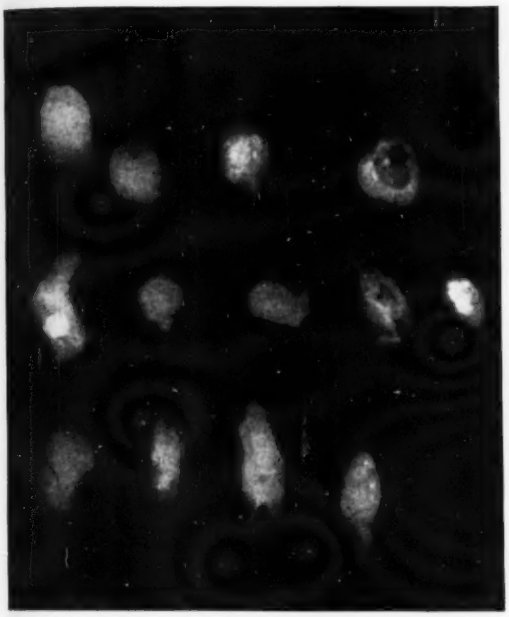

Figure 8 — Supero-inferior view of excised pineal glands showing calcification. Pineal on right side of middle row exhibits eccentric calcification.

Summary and Conclusions

1. In frontal projections the degree of permissible rotation varies inversely as the cephalic index of the skull; i.e., the dolichocephalic skull allows most rotation before a 2 mm. displacement occurs; the brachycephalic skull allows least.

2. Permissible rotation is greatest in the Caldwell projection. About 8° of rotation of the skull is the maximum that can be accepted in diagnostic work. In skulls of all three shapes, whether symmetrical or asymmetrical, the degree of permissible rotation is greater than this in the Caldwell projection. It would appear, therefore, if the Caldwell projection is acceptable with regard to rotation it is safe to measure the pineal gland for lateral displacement in this view.

3. Both symmetrical and asymmetrical skulls show a marked reduction in permissible rotation as one proceeds from Caldwell to either Towne or reverse Caldwell projections.

4. If the pineal measures slightly in excess of 2 mm. from the midsagittal plane and the skull is markedly rotated, the determination of the cephalic index is important since mesocephalic and brachycephalic skulls have less permissible rotation than do dolichocephalic skulls.

5. In the lateral projection, a rotation of 20° produces no significant change in the position of the pineal gland. Beyond 15° of rotation, the roentgenogram would not be acceptable for interpretation.

6. Since the pineal gland lies in the posterior half of the antero-posterior diameter of the skull, it follows, by the principle of parallax, that in a rotated skull the pineal will move in the direction of the external occipital condyle or the lambda rather than the crista galli. In any case in which this does not occur, the pineal gland is displaced.

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ANEURYSM OF THE RENAL ARTERY

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This paper is presented with the intention of pointing out the diagnostic characteristics of a condition which, although uncommon, requires prompt and early diagnosis in order that appropriate and sometimes life-saving treatment may be instituted.

Renal artery aneurysms have a frequency of one in 8000 routine post mortem examinations, and account for one per cent of all aneurysms. They occur equally as commonly in both sexes and may occur at any age, but predominate in the third and fourth decades. Neither kidney is more predisposed.

The etiology of renal artery aneurysms has been adequately discussed in previous papers and, generally, is not unlike any other aneurysm. They may be congenital or acquired, and either may be true or false. As a rule, it is the media which is defective. In the congenital variant a developmental fault is thought to exist, such as in the "berry" aneurysm in the circle of Willis, while in the acquired variety weakness is variously attributed to inflammation, degeneration, and trauma.

Clinically, the signs and symptoms are not characteristic and usually do not aid in the diagnosis. Pain is the most commonly encountered symptom and in the order of frequency the signs include hematuria, palpable mass, tenderness, hypertension, and systolic bruit. The diagnosis is made largely by radiological studies. Plain films of the abdomen, retrograde and intravenous pyelography, and finally aortography, each serve a useful purpose. Calcification in the wall of the aneurysm is reported to be present in 25 to 50 per cent of cases[4,12]. As with calcification of any aneurysm visualized radiologically, the characteristic shadow is a ring of calcium density the outline of which is deficient where it arises from the parent artery. It is usually visualized on the medial aspect and in the upper third of the kidney. Retrograde and intravenous pyelography will demonstrate its close and constant relationship to the kidney, and may show some compression of the renal pelvis or calyces by the aneurysm. Aortography, whether calcium is present or not, will allow positive identification by opacification of the lumen of the aneurysm.

The differential diagnosis is not extensive. Other regional calcifications may be intrarenal or extrarenal. The latter possess sufficient characteristic features to require no further consideration. Of the intrarenal calcifications, calculi are usually of uniform density and not ring-shaped. Calcification of abscesses, cysts and tumours of the kidney or adrenal glands is usually of mottled density and associated with some deformity of renal outline. The chief differentiation is from calcified aneurysms of the splenic, hepatic, mesenteric and pancreatic arteries, but the anatomical position of these will usually allow ready differentiation. In case of question, aortography and other radiological studies will offer final proof of origin.

Prognostically, it has been repeatedly stated that aneurysms of the renal artery will eventually rupture and cause death. Abeshouse states that 45 out of 115 cases reported in the literature died as a result of their aneurysms, while Lowsley believes that most die within one year of the onset of symptoms.

Fig. I — Characteristic ring of calcific density seen opposite the 1st right lumbar transverse process. The defect is at the top.

Presented at the Annual Meeting of The Canadian Association of Radiologists, January 13-17, 1957, Montreal.

Within the past year, two cases of renal aneurysm have been investigated and successfully treated at the Royal Victoria Hospital. The first is that of Mrs. E. L., aged 51, who was admitted to the hospital on August 15th, 1955, with complaints of back pain in the *left* lumbar region, and polyuria 12 to 15 times daily for an undetermined period. She was found at this time to have Diabetes Mellitus. Plain films of the abdomen made at the time of cystoscopy revealed a rounded shadow of calcific density in the region of the *right* renal pelvis (Fig. I). The patient was discharged without further investigation after her diabetes was controlled.

On May 28th, 1956, she was re-admitted for investigation of this calcification in the region of the right kidney. Physical examination was entirely negative. Her blood pressure averaged 150/90. Examination of the urine revealed no definite abnormality.

Intravenous and retrograde pyelography revealed a ringed shadow of calcium density lying on the medial aspect of the kidney and causing a smooth filling defect in the superior calyx (Fig. II). Aortography confirmed the presence of a calcified aneurysm arising from the superior branch of the right renal artery (Fig. III). On June 22nd, 1956, a right total nephrectomy was performed and, at operation, a hard, rounded mass, the size of a cherry, could be palpated near the upper part of the renal pelvis.

Fig. II — Retrograde pyelogram showing the close association of the calcified ring to the renal pelvis.

Fig. III — Aortogram showing opacification of right renal artery. The artery enters the calcified ring at the defect on the top.

Examination of the speciment at pathology revealed a calcified aneurysmal sac measuring 13 mm. in diameter, in a branch of the renal artery to the upper pole of the kidney. Two smaller arteries took origin from the external surface of the aneurysm. No evidence of focal atrophy was seen. The final pathological diagnosis was that of an aneurysm of a secondary division of the renal artery with arteriosclerosis (G. C. McMillan).

The second case, Mrs. C. F., aged 54, was admitted on July 24th, 1956, with the complaint of pain of 15 years duration in the right lumbar region, and burning and frequency for 2 years. The pain was occasional at first and was not incapacitating. For the past 2 years, however, it had become increasingly severe, although still periodic. It did not radiate, nor was it associated with nausea or vomiting. There was no history of blood or pus in the urine.

Physical examination revealed some tenderness in the right renal area, but no other positive findings. Her blood pressure was 130/90 mm. of Hg. Examination of the urine revealed many red blood corpuscles and a few white blood cells per high power field on catheterized ureteral specimens from both kidneys.

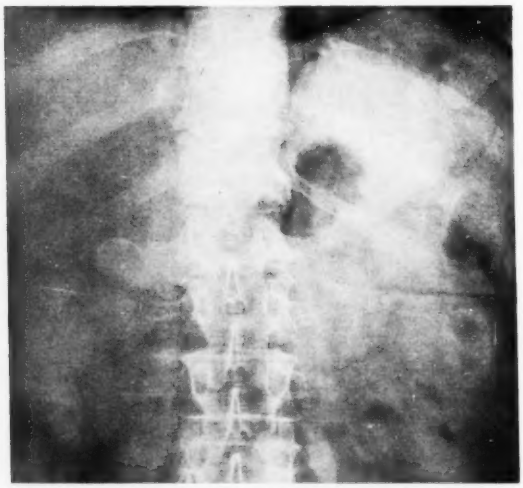

Fig. IV — Plain film of the abdomen showing the charateristic ring of calcific density. The defect is in the lower half.

Fig. V — Intravenous pyelogram showing the close relationship of the calcific ring to the superior calyx.

An intravenous pyelogram on July 25th, 1956, showed a ringed shadow of calcium density, (Fig. IV), opposite the transverse process of the first lumbar vertebra on the right, in constant relationship to the kidney on its medial aspect, and causing a smooth concave compression of the superior calyx (Fig. V). Aortography demonstrated the right renal artery, and confirmed the presence of an aneurysm arising from its superior branch (Fig. VI).

At operation on August 10th, 1956, a right total nephrectomy was performed. Pathologically, a saccular aneurysm measuring 16 mm. in diameter was found, arising from the superior branch of the renal artery 5 mm. from the point of bifurcation. The wall measured 3 mm. in thickness and was partially calcified. An additional finding was a subacute and chronic pyelonephritis, which was felt to be the origin of the red and white cells in the urine. The final pathological diagnosis was that of an arteriosclerosis of the renal artery with aneurysm formation.

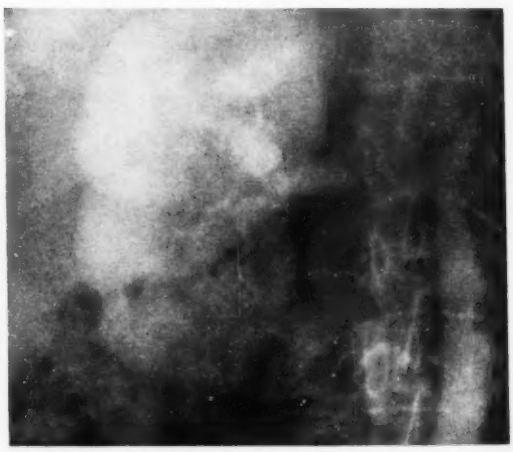

Fig. VI — Aortogram showing the opacified right renal artery, the superior branch of which enters the calcified ring through the defect.

Summary

1. Although renal artery aneurysms are uncommon, as indicated by their frequency of one in 8000 routine autopsies, most authors agree that the prognosis may be extremely grave, and that early diagnosis and prompt treatment is therefore essential, and may be life-saving.

2. Diagnosis is based almost entirely on radiological evidence, a combination of plain films, urography, and aortography allowing positive identification in all cases.

3. Two cases of aneurysm of the renal artery have been presented, both having been diagnosed pre-operatively and successfully treated by nephrectomy.

(NOTE: *Since this paper was presented two more cases of renal artery aneurysm have been diagnosed and treated surgically at the Royal Victoria Hospital.)*

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PICKER FOUNDATION AWARDS

Three Canadian scientists are among this year's James Picker Foundation award winners. These awards are intended to foster research on radiological methods for both diagnosis and treatment of disease.

For the first time, the Foundation's Canadian funds are being administered by the National Research Council of Canada.

The three Canadian grants for 1958-59, totalling $7500, went to:

Dr. Albert Jurtas, Dept. of Radiology, Hôtel Dieu Hospital, Montreal — fibroplastic infiltration of the submucosa in minute cancers of the stomach and its effects upon gastric motility and radiological images;

Dr. J. S. Dunbar, Montreal Children's Hospital — effects of barium sulphate on the tracheo-bronchial tree of rats in comparison with other contrast media; and

Dr. R. L. de C. H. Saunders, Dept. of Anatomy, Dalhousie University, Halifax, N. S. — X-ray microscope studies of the nervous system with special reference to the blood supply of the cerebral cortex and spinal cord.

EFFECTS OF PREDNISOLONE IN THE TREATMENT OF SUPERFICIAL RADIATION LESIONS OF THE SKIN AND MUCOSAE*

by
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Hôtel Dieu Hospital
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The anti-inflammatory effect of cortisone and similar steroids is well known. We are all aware that they excel at masking the symptoms of a lesion without in any way influencing the cause. In several conditions of brief duration, they can even keep the inflammation in check until definite cure.

Starting from this principle, hydrocortisone was applied topically to dry radioepidermitis. Not only was immediate subjective improvement of the lesions noted, but our impression was that the healing stage was shortened. In the presence of such results we adopted this therapy for the treatment of all patients with superficial radiation lesions.

We replaced hydrocortisone with prednisolone which is about twice as potent, and we systematically used the same medication in three forms:

— an ointment containing: **
½% prednisolone with
½% neomycin sulphate
in a petrolatum base.

— an ophtalmic ointment containing:
½% prednisolone
¼% neomycin sulphate
10% sulfacetamide sodium
also in a petrolatum base.

— tablets containing 1, 2.5 and 5 mg. of prednisolone.

We undertook the treatment of superficial radiation lesions of the skin and mucosae chiefly to relieve discomfort and also to observe the action of prednisolone on the evolution and time of healing. There was prompt recession of the symptoms in all cases and in some of them re-epidermization seemed to be activated.

For the sake of objectiveness and consistency, the lesions were always photographed by the same technique, using the Eastman Kodak "Technical Close Up Outfit".

The results obtained in each type of case will now be described.

Treatment was applied to patients with dry epidermitis which had appeared either following treatment or during the course of treatment, in patients whose skin was hypersensitive to radiation. Only cases which were severe enough to cause considerable discomfort were treated. The following is a typical example.

A female, age 42, was given postoperative radiotherapy for cancer of the breast. She was of very light complexion and hypersensitive to solar rays. In the middle of the treatment, with a very low dose, she showed up an extremely painfull erythema causing her much discomfort. The skin dose received was 1500 r on a 100 - sq. cm. field, administered in 30 days at the rate of 200 r once a week. A 250 - kv. beam with a half-value layer of 3 cm. of copper was used.

Prednisolone ointment was then applied morning and night on all irradiated areas and within 24 hours all subjective symptoms disappeared. There was a slight browning of the skin and treatments were continued uninterruptedly at the prescribed dosage and at the same intervals. At a 2500 r dosage only a pigmentation without progression of epidermitis was observed. The patient felt no more discomfort and two months later there merely remained a residual pigmentation and no moist reaction or troublesome symptoms had occurred.

The treatment was applied to patients with moist epidermitis due to either deep or contact radiotherapy. Moist epidermitis due to deep radiotherapy was treated topically with the same Prednisolone with Neomycin ointment. Immediate attenuation of subjective symptoms was noted in all cases and of the exudative phenomena in nearly all. Rapid desquamation was followed by the appearance of new, pinkish, smooth and supple skin.

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*Presented at the Annual Meeting of The Canadian Association of Radiologists, January 13-17, 1957, Montreal.

**The medication, Meti-Derm with Neomycin Ointment, Metimyd Ophtalmic Ointment and Meticortelone tablets were generously supplied by Schering Corporation.

The results of treatment of contact-radiation lesions were dramatic. In these cases, application of Prednisolone always produced almost instant relief of pain. Necrotic tissue was promptly eliminated and healing seemed to be definitely hastened. The two following cases are fairly convincing:

The first case was a patient, age 71, with a basal-cell carcinoma of the nose (Fig. 1). The lesion was irradiated with a total air dose of 4872 r in 37 days, over an area of 20 mm. ϕ, with a 50 - kv. beam having a H.V.L. of 1.3 mm. of aluminium. One week after treatment, (Fig. 2) moist radio-epidermitis was very severe. Prednisolone with Neomycin ointment was then prescribed morning and night. All symptoms vanished and Figure No. 3 shows the appearance of the lesion at exactly the 43rd hour, after less than two days. Nearly all signs of moistness have cleared and healing is abnormally rapid. Figure No. 4 was taken one month later.

The following case is also worth reporting. This was a patient with two basal-cell carcinomas of pagetoid type, located respectively on the thorax, (Fig. 5) and on the arm (Fig. 6). The same technique was used on both lesions. At the end of the treatment the air dose was 4688 r, over an area of 40 mm. ϕ, given in 28 days, under 50 kv. with a H.V.L. of 1.3 mm. of aluminium, and at that time the patient showed marked moist epidermitis at both lesions (Figs. 7 and 8).

The thoracic lesion was treated with Prednisolone with Neomycin ointment whereas lanolin only was applied to the arm lesion. Figure 9 taken two weeks later shows that healing of the thoracic lesion is proceeding better than that of the arm lesion shown on Figure 10. All the subjective symptoms of the thoracic lesion had disappeared, while on the arm, pain and burning sensation were increasing.

For the benefit of the patient, Prednisolone ointment was then applied on the arm. Three weeks later, epidermization is much further advanced on the thoracic lesion (Fig. 11) than on the arm (Fig. 12), and at the end of five weeks healing is complete on the thorax (Fig. 13) and nearing completion on the arm (Fig. 14).

This series shows that prednisolone undoubtedly played an important part in aiding tissue repair following radiation lesions.

As treatment of malignant lesions of the eyelids sometimes caused, in addition to moist epidermitis, epithelitis of the palpebral mucosa with associated conjunctivitis, topical treatment with Prednisolone ophtalmic ointment was used to relieve the patients of their symptoms. There was prompt relief of subjective symptoms in all cases and, here again, healing seemed to require less time.

Finally, these encouraging results induced us to try this therapy in radio-epithelitis of the oral cavity. We treated oral radiolesions by instructing the patient to allow Prednisolone tablets to melt in the mouth. The patients had been subjected to either contact therapy, or deep intracavitary therapy, or telecobalt therapy.

Figure 15 shows a cancer of the tongue before treatment and Figure 16 shows the same lesion at the end of the treatment with fully developed radioepithelitis. Irradiation had been administered at 200 kv. with a H.V.L. of 0.83 mm. of copper.

The lesion (Fig. 16) was so painful as to prevent the patient from eating and seriously interfered with his speech. For this patient we prescribed Prednisolone tablets, 2.5 mg. 3 times daily, to be allowed to melt in the mouth. In 24 hours all subjective symptoms had cleared and the patient could eat and speak without difficulty, but the aspect of the lesion remained unchanged. In patients who had been subjected to telecobalt therapy, the results on the whole did not appear so good, but no explanation can as yet be furnished for this difference.

Summing up, our conclusions are as follows:

In dry epidermitis, topical application of Prednisolone with Neomycin Ointment, morning and night, promptly produced marked relief. Moreover, duration of the objective phenomena appeared to be shortened.

In moist epidermitis, the same medication, e.g., topical application of the same ointment morning and night, produced equally dramatic palliation and also, in our opinion, acceleration of the healing process.

In epidermitis with associated conjunctivitis and epithelitis at the eye level, topical administration of Prednisolone Ophtalmic Ointment 3 to 4 times daily dispelled all signs of irritation. Conjunctivitis responded in 2 to 3 days and healing seemed to be more rapid.

Finally, in buccal mucositis, Prednisolone was administred in 1 to 5 mg. dosage to be allowed to melt in the mouth, 3 to 5 times daily. In most cases there was marked attenuation of the symptoms though in a few cases

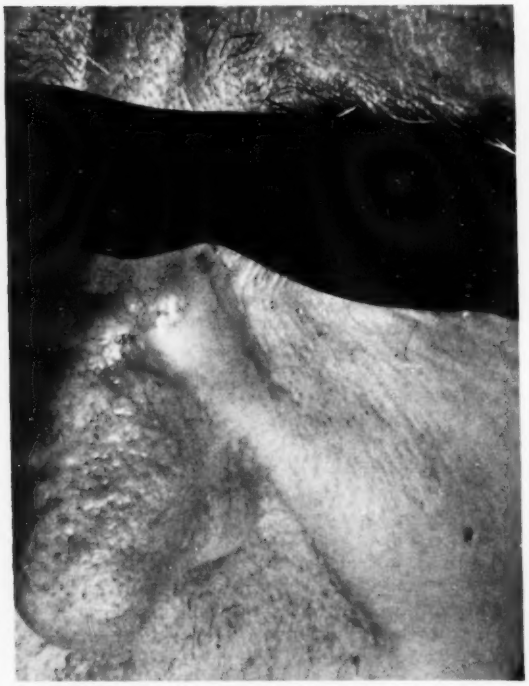
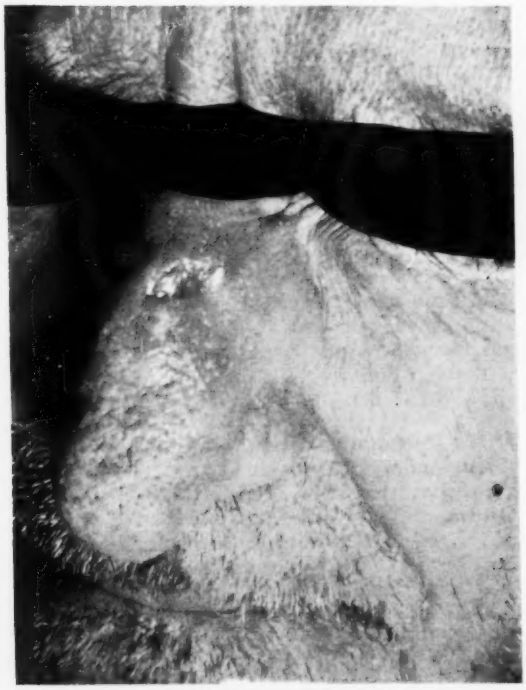


Figure 1.

Figure 2.



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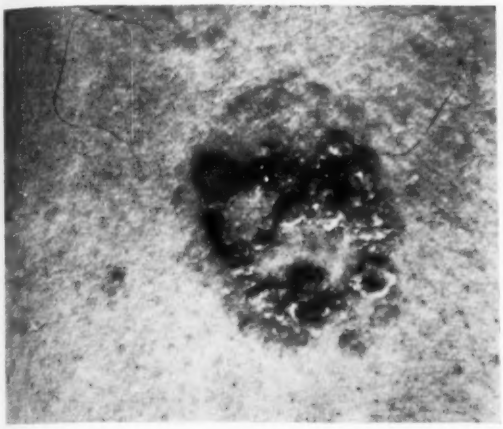

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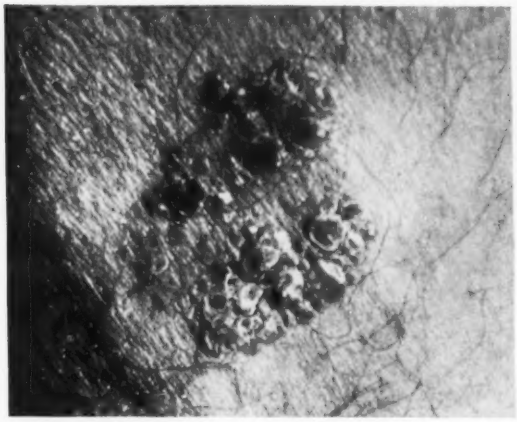

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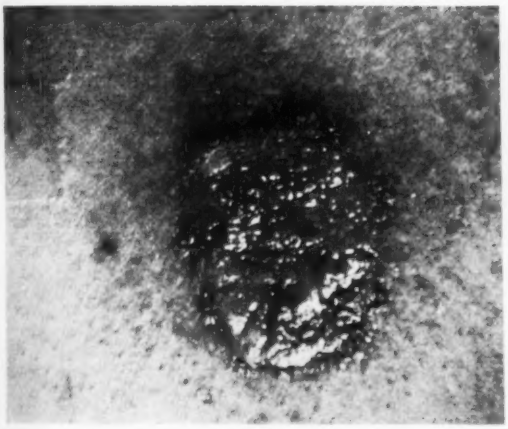

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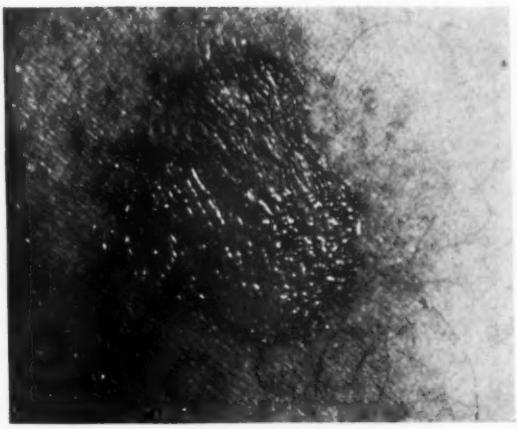

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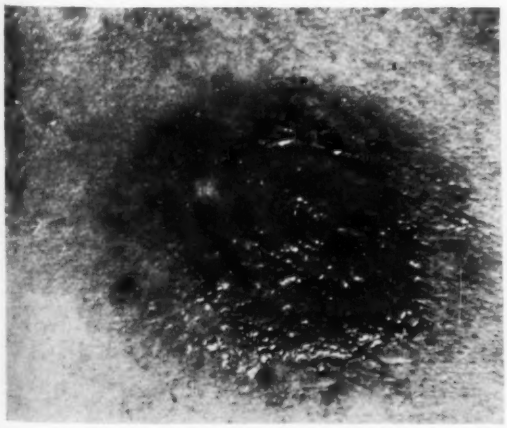

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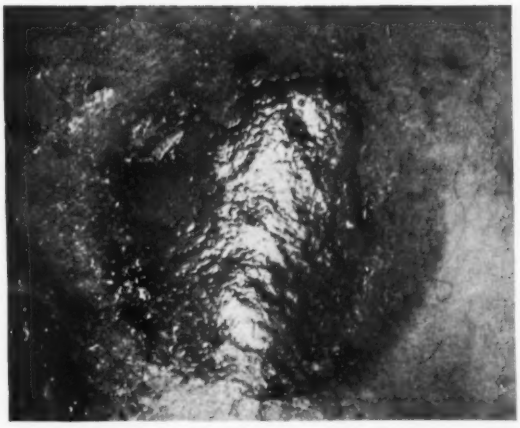

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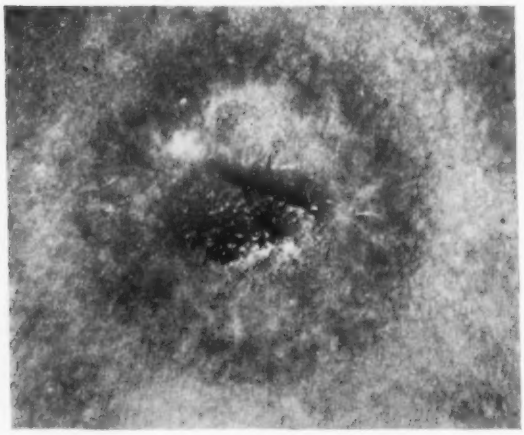

Figure 11.

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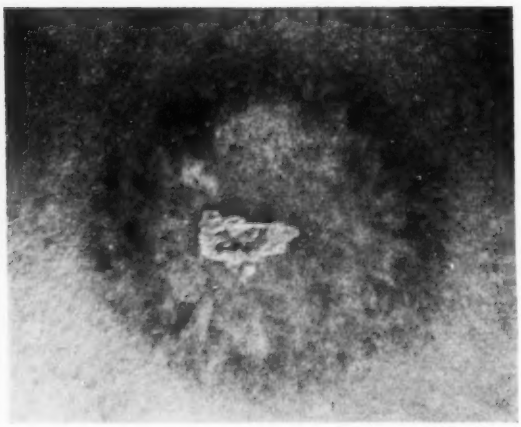


Figure 13.

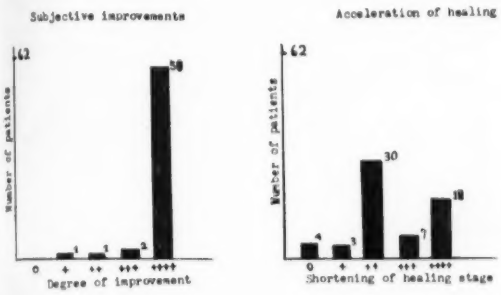
Figure 14.

Figure 15.

Figure 16.

the attenuation was only slight and temporary. The aspect and evolution of radioepithelitis remained unchanged. We did not observe any differences attributable to dosages of 1, 2.5 and 5 mg. Frequent small divided doses, e.g., 1 mg. five times daily seemed to produce the best results.

GRAPHIC SUMMARY OF GLOBAL RESULTS



Whatever the route of administration, the patient should be warned that he may feel a transient burning sensation on first contact with the medication, but such irritation is always of short duration and gives way to a sensation of local well-being.

We consider that this form of therapy is worthy of attention. In our opinion it should be used solely to alleviate the subjective symptoms and not for the purpose of permitting heavier radiotherapy dosages, as there would then be a risk of unknowingly exceeding the tolerated tissue dosage and the delayed reaction would manifest itself only after irreversible damage has occurred.

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MEETINGS

The Canadian Association of Radiologists

The 22nd Annual Meeting of the Canadian Association of Radiologists will take place in Saskatoon at the Bessborough Hotel, January 11th - 14th, 1959. Complete details will be sent to the membership in the next bulletin.

6th InterAmerican Congress of Radiology

The 6th Inter-American Congress of Radiology will take place in Lima, Peru, November 2nd - 8th, 1958. The address of the General Secretary is as follows:

Dr. Vicente Ubillus, General Secretary, Congreso InterAmericano de Radiologia, Instituto de Radiologia "Cayetano Heredia", Hospital Arzobispo Loayza, Lima, Peru.

9th International Congress of Radiology

The 9th International Congress of Radiology will take place in Munich, Germany, July 23rd - July 30th, 1959. The address of the Secretary General is as follows:

Professor H. v. Braunbehrens, Secretary General. 9th International Congress of Radiology, Reitmorstrasse 29, Munich 22, Germany.

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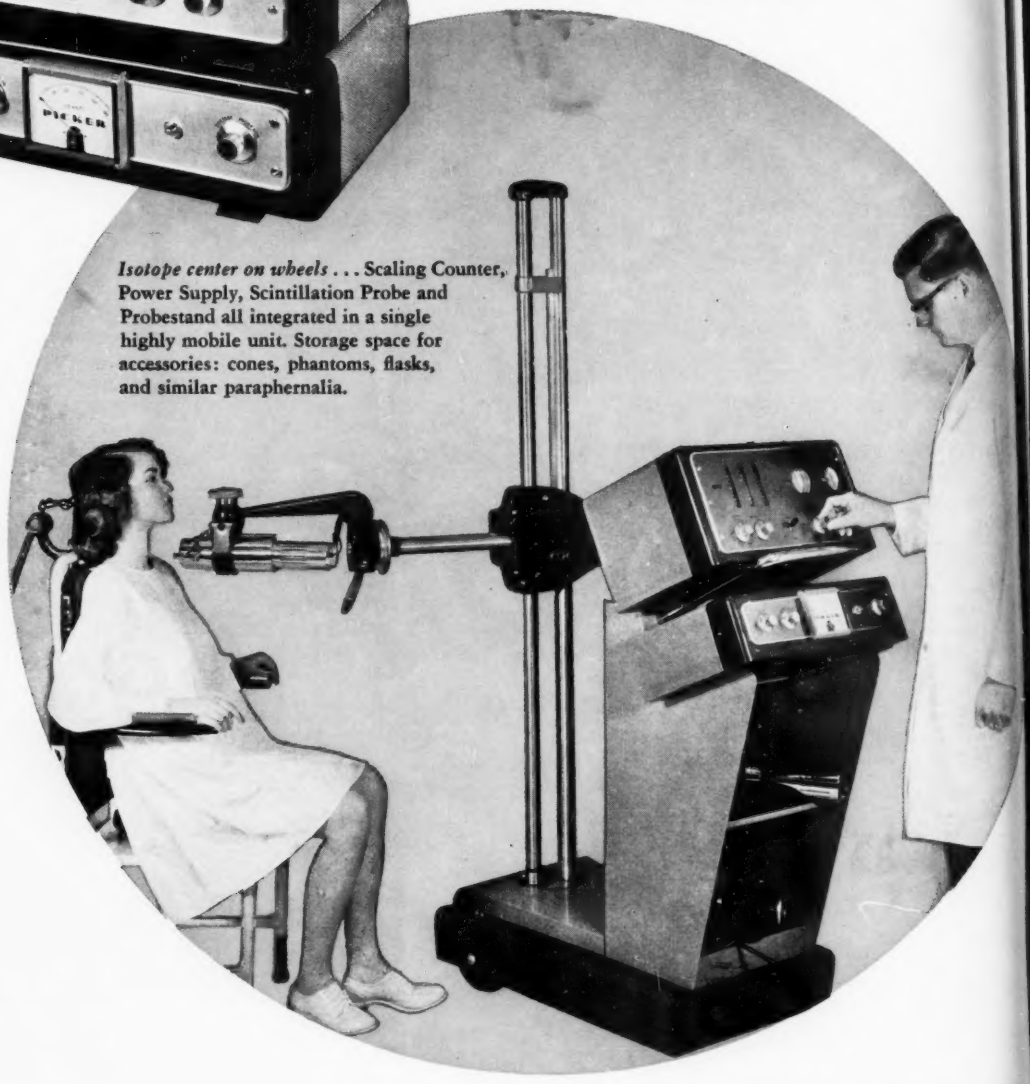

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